

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. – 9. (cancelled)

10. (new) A method for producing expandable particles of a styrene-modified linear low-density polyethylene-based resin comprising, in the order recited:

dispersing 100 parts by weight of non-crosslinked linear low-density polyethylene-based resin particles, 30 to 300 parts by weight of a styrene-based monomer, and 0.1 to 0.9 parts by weight of a polymerization initiator relative to 100 parts by weight of the styrene-based monomer into a suspension containing a dispersant;

impregnating the styrene-based monomer into the low-density polyethylene-based resin particles by heating a resultant dispersion at such a temperature that polymerization of the styrene-based monomer does not substantially take place;

performing a first polymerization of the styrene-based monomer at a temperature of higher than $(T-8)^\circ\text{C}$ and lower than $(T+1)^\circ\text{C}$, $T^\circ\text{C}$ being a melting point of the low-density polyethylene-based resin particles;

adding a styrene-based monomer and 0.1 to 0.9 parts by weight of a polymerization initiator relative to 100 parts by weight of the styrene-based monomer after the first polymerization has reached a conversion ratio of from 80% to 99.9%, and performing an impregnation of the styrene-based monomer into the low-density polyethylene-based resin particles and a second polymerization of the styrene-based

monomer at a temperature of higher than $(T-15)^\circ\text{C}$ and lower than $(T+5)^\circ\text{C}$, $T^\circ\text{C}$ being a melting point of the polyethylene-based resin particles; and

impregnating a volatile blowing agent during or after the polymerization;
a total amount of the styrene monomers used in the first and second polymerizations being more than 300 parts by weight and not more than 1000 parts by weight relative to 100 parts by weight of the low-density polyethylene-based resin particles;

whereby resin components of the expandable particles contain a gel component comprising from 2 to 40 wt% of a graft polymer.

11.(new) The method of claim 10, wherein the second polymerization is performed at a temperature in a range of from higher than $(T-8)^\circ\text{C}$ to lower than $(T+1)^\circ\text{C}$.

12. (new) The method of claim 10, wherein the linear low-density polyethylene-based resin particles each have a substantially spherical shape or a cylindrical shape having an L/D of from 0.6 to 1.6, L being a length of each particle and D being a diameter of each particle, and an average particle size of from 0.2 to 1.5 mm.

13. (new) The method of claim 10, wherein the styrene-based monomer comprises at least one of styrene, α -methylstyrene, vinyltoluene, and chlorostyrene.

14. (new) The method of claim 10, wherein a molecular weight of a polystyrene-based resin component is from about 200,000 to 400,000.

15. (new) The method of claim 10, wherein the non-crosslinked linear low-density polyethylene-based resin comprises a copolymer of ethylene and an α -olefin.

16. (new) The method of claim 15, wherein the α -olefin comprises at least one of 1-butene, 1-pentene, 1-hexene, 3,3-dimethyl-1-butene, 4-methyl-1-pentene, 4,4-dimethyl-1-pentene, and 1-octene.

17. (new) The method of claim 10, wherein 0.2 to 0.5 parts by weight of a polymerization initiator relative to 100 parts by weight of the styrene-based monomer are used.

18. (new) The method of claim 10, wherein the total amount of the styrene monomers used in the first and second polymerizations is not more than 900 parts by weight relative to 100 parts by weight of the low-density polyethylene-based resin particles.

19. (new) The method of claim 10, wherein the gel component comprises from 5 to 35 wt% of a graft polymer.

20. (new) The method of claim 13, wherein the second polymerization is performed at a temperature in a range of from higher than $(T-8)^\circ\text{C}$ to lower than $(T+1)^\circ\text{C}$; from 0.2 to 0.5 parts by weight of a polymerization initiator relative to 100 parts by weight of the styrene-based monomer are used; the non-crosslinked linear low-density polyethylene-based resin comprises a copolymer of ethylene and at least one of 1-butene and 1-hexene; the total amount of the styrene monomers used in the first and second polymerizations is

not more than 900 parts by weight relative to 100 parts by weight of the low-density polyethylene-based resin particles; and the gel component comprises from 5 to 35 wt% of a graft polymer.

21. (new) Expandable particles of a styrene-modified linear low-density polyethylene-based resin, wherein the particles comprise a volatile blowing agent and a base resin, the base resin comprising more than 300 parts by weight and less than 1000 parts by weight of a polystyrene-based resin component relative to 100 parts by weight of a non-crosslinked linear low-density polyethylene-based resin component, the base resin comprising from 2 to 40 wt% of a gel component comprising a graft copolymer of the polystyrene-based resin component and the low-density polyethylene-based resin component.

22. (new) The expandable particles of claim 21, wherein the base resin comprises not more than 900 parts by weight of a polystyrene-based resin component relative to 100 parts by weight of a non-crosslinked linear low-density polyethylene-based resin component.

23. (new) The expandable particles of claim 22, wherein the base resin comprises from 5 to 35 wt% of a gel component comprising a graft copolymer of the polystyrene-based resin component and the low-density polyethylene-based resin component.

24. (new) The expandable particles of claim 22, wherein a molecular weight of the polystyrene-based resin component is from about 200,000 to 400,000.

25. (new) Expandable particles of a styrene-modified linear low-density polyethylene-based resin, wherein the particles are obtained by the method of claim 10.

26. (new) Pre-expanded particles having a bulk density of from 20 to 200 kg/m³, obtained by pre-expanding the expandable particles of the styrene-modified linear low-density polyethylene-based resin of claim 21.

27. (new) An expanded molded article having a density of from 20 to 200 kg/m³, obtained by expansion molding of the pre-expanded particles of claim 26.

28. (new) Pre-expanded particles having a bulk density of from 20 to 200 kg/m³, obtained by pre-expanding the expandable particles of the styrene-modified linear low-density polyethylene-based resin of claim 25.

29. (new) An expanded molded article having a density of 20 to 200 kg/m³, obtained by expansion molding of the pre-expanded particles of claim 28.